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ABSTRACT

The study attempted to chart the differences in self-concept between academically gifted and non-gifted competent seventh-graders, and also to investigate the attributional patterns associated with self-concept across four domains of activity--social and academic achievement oriented success and failure. The study attempted to measure changes in both self-concept and attributional patterns manifested after an intervention in which students experienced a type of consensual validation process as a by-product of participating in an academically rigorous summer residential program. A nonequivalent control group design involving pre-, immediate-, and remote-post measures was employed. The premeasure showed differences between gifted and competent students where competent students had significantly greater self-concepts in the areas of social and physical activities while gifted students' academic self-concept was greater, and gifted students were less likely than competent students to take credit or see as pervasive the causes for social success. Measures after the summer program showed that gifted attendees decreased the extent to which they internalized the blame for or perceived as pervasive the causes for social failure, providing tentative support for the hypothesis that short-term consensual validation would moderate observed group differences. (Author/JDD)

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CHANGE IN SELF-CONCEPT AND ATTRIBUTIONAL PATTERNS
OF GIFTED ADOLESCENTS AS A RESULT
OF CONSENSUAL VALIDATION

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ABSTRACT

A nonequivalent control group design involving pre-, immediate-, and remote-post measures was employed to identify initial differences between academically gifted and competent students' global self-concept, structure of self-concept, attributional style and the extent to which such differences were moderated by consensual validation obtained by gifted students in the course of an intensive summer residential academic program. On the premeasure, no differences were observed on any of the measures between the two gifted groups -- those who would attend and those who would not attend the program. However, differences between gifted and competent students obtained on both sets of measures. Competent students boasted significantly greater self-concepts in the areas of social and physical activities while gifted students' academic self-concept was greater. The overall measure of self-concept was not significantly different between the groups. On the measure of attributional style gifted students were significantly less likely than competent comparisons to take credit or see as pervasive the causes for social success.

Phase II measures provided only tentative support for the hypothesis that short-term consensual validation would moderate observed group differences. More specifically, while neither social nor physical self-concept increased among program attendees, gifted attendees decreased the extent to which they internalized the blame for or perceived as pervasive the causes for social failure subsequent to program participation. The relationship of observed changes in attribution to self-concept and the effectiveness of short-term interventions to effect change in the areas of cognitive function and personality are discussed.

INTRODUCTION

In the more than sixty years which have elapsed since Terman's (1925) seminal work concerning the psychological characteristics and physical traits of brilliant Americans, little has been accomplished in furthering our basic understanding of the socio-emotional development of gifted individuals. This is particularly distressing in that these individuals represent one of the most important human resources enabling our society to evolve and achieve its potential. Given that a sizeable minority of gifted children and adolescents may experience emotional difficulties directly traceable to their precocity (Hollingworth, 1942; Janos & Robinson, 1985), they may be far less likely to mature and fulfill their academic and humanitarian potential if their psychosocial difficulties continue without intervention.

Prior to successful intervention, of course, an adequate comprehension is required of the various emotional and cognitive characteristics of those individuals who experience some level of distress. Without a thorough investigation of the specific areas that are problematic for gifted individuals and a concurrent exploration of how these students interpret these difficulties (i.e., their attributions about problematic outcomes), intervention is based only upon speculation. An empirical base of knowledge combining information about the specific areas in which gifted students experience difficulty (e.g., academic, family, peers) with information concerning how academically advanced students think about these aspects of their lives will be a major step forward.

The empirical base has been under construction during the last decade, but it is far from sufficient. Reviews by Daurio (1979), Holahan and Brounstein (manuscript under review), and Janos and Robinson (1985)

have all concluded that the psychosocial adjustment of gifted adolescents is generally good; studies that take exception to this view also have been noted (Chambers & Dusseault, 1972; Mason, Adams, & Blood, 1968; Milgram & Millgram, 1976). Although good adjustment has generally been the rule, Shaywitz et al. (1986), Janos (1983), and Janos, Fung, and Robinson (1985) have reported that a significant minority of gifted students experience serious emotional difficulties. Speculation about the causes of these problems varies but Janos et al. (1985) have related poor psychosocial adjustment in general and low self-concept in particular to a subjective sense of feeling different from other individuals their age.

Gifted students' self-concept has been the focus of a number of investigations (e.g., Janos et al., 1985; Kelly & Colangelo, 1984; Tidwell, 1980; Winne, Woodlands, & Wong, 1982). As Janos and Robinson (1985) point out, however, the great majority of these studies focus on and report about self-concept. Of those that do differentiate between areas of self-concept, academic self-concept is usually found to be higher among gifted students than nongifted students (e.g., Winne et al., 1982). Specific areas within academic and nonacademic domains of self-concept have yet to be investigated.

Borrowing Shavelson, Hubner & Stanton's (1976) view of self-concept as multidimensional in nature, and Marsh & colleagues' (1983) Self Description Questionnaire II, a measure of global and domain specific self-concept, we attempted to chart not only the differences in self-concept between gifted and academically competent individuals, but also to investigate the attributional patterns associated with self-concept across four domains of activity -- social and achievement oriented success and failure. To assess attributional patterns among these students an

extended version of Peterson et al's. (1982) Attributional Style Questionnaire was used.

In addition to charting differences between the self-concept and attributional style of gifted and competent adolescents, the present study attempted to measure changes in both self-concept and attributional patterns manifested after an intervention in which students experienced a type of consensual validation process as a by-product of participating in an academically rigorous summer residential program -- the Duke University Talent Identification Program's Summer Residential Program (SRP). This was of interest for several reasons. First, over the past six years of the SRP, TIP has received literally hundreds of unsolicited letters from parents and students reporting that the summer experience had meaningfully changed the student's life, increasing his or her self-assurance and building a social support/friendship network where none existed before. This latter claim has been verified previously and documented by Kimble and Sawyer (1984). Also, if problems in self-concept stem from feelings of "differentness" or isolation as argued by Janos (1985) and others then certainly a situation in which a student is placed together with hundreds of intellectual and emotional peers of the same age should, for the large majority, decrease such feelings. To the extent that decreases in the perception of one's self as "different" obtain and remain lower over time, either because students maintain contact with new-found peers or because attributions for social success and failure become more adaptive, we should expect long-term improvements in several domains of self-concept, if not in overall self-concept as well. If demonstrated, the import of these almost incidental effects of programs like TIP for educational practices should be clear.

Thus, the aims of the study were threefold:

- °To identify differences in global self-concept and domains of self-concept between academically gifted and competent students;
- °To determine whether differences in specific domains of self-concept are related to differences in causal attributions for success and failure outcomes across achievement and social endeavors; and
- °To gauge both proximal and more distal effects of participating in a short-term intervention offered in the context of an academically rigorous summer residential program on components and global self-concepts and associated causal ascriptions.

METHOD

Overview

The study employed a pre-post and remote post assessment of self-concept and attributional style across three groups of students: those qualified for and attending the SRP; those qualified for but not attending the SRP; and academically competent students who would not qualify for the SRP. All assessments were conducted by mail. The premeasure was posted during May, 1986 -- about two months before the SRP began; the initial postmeasure was mailed in September, 1986 -- between one and two months subsequent to the SRP; and the remote postmeasure was in mailed late January of 1987, between six and seven months subsequent to the SRP.

Subjects

Students who had qualified for the Talent Identification Program's (TIP) Summer Residential Program for the first time comprised the gifted

samples. In order to be eligible for participation in the SRP, these students scored in at least the 97th percentile on an age-normed standardized achievement test (e.g., California Achievement Test) and, while in seventh grade, scored in at least the 73rd percentile of college-bound high-school seniors on either the Math or Verbal subsections of the Scholastic Aptitude Test. The non-gifted sample was comprised of seventh-grade students from the local county school system.

Participation. A total of 257 students of seventh grade age who were attending TIP for the first time, were mailed materials asking them to participate in the study. Of these, 174 participants (68%) returned Informed Consent Documents signed by themselves and a parent and were sent Phase I study materials. Of these students, 156 completed Phase I questionnaires, and 98 completed Phase II surveys; this represented response rates among participants of 90% and 63% respectively. In the gifted-non-attending sample, 301 students selected randomly from the total gifted-non-attending sample of 1,371 were contacted initially and 198 returned Informed Consent Documents signed by themselves and their parents (66%). Of these, 172 completed Phase I surveys (87%) and 120 completed Phase II surveys (70%). All seventh graders ($n = 489$) from two large county system junior high schools were asked to participate in the study. Only students who had not scored above the 97th percentile on a standardized achievement test were included in data analyses. A total of 143 students (30%) returned Informed Consent Documents and were sent study materials. Of these students, 106 returned all Phase I study materials (74%) and 72 returned Phase II study materials (68%).

Sample profiles. Gifted samples were virtually identical across gender, household income and ethnic origin. The gifted attending sample

(GA) was 62% Male, 81% White, 2% Black, 1% Hispanic, 14% Oriental and 1% American Indian. Categories of total annual household income ranged from less than \$15,000 to more than \$60,000 per annum with an estimated mean value of about \$48,683 (SD = \$15,122). SAT scores in this sample averaged 552 in math and 501 in verbal. The gifted-non-attending sample (GNA) was 66% Male, 87% White, 1% Black, 1% Hispanic, 10% Oriental, and 1% Native American. Household income again covered the full range of categorical response -- from less than \$15,000 to more than \$60,000 per annum ($x = \$46,854$; $SD = \$15,404$). SAT scores averaged 550 in math and 496 in verbal.

Both gifted samples differed from the competent sample in terms of ethnic and gender composition but were virtually equivalent on household income. The competent sample was 42% Male, 67% White, 25% Black, 3% Hispanic, 3% Oriental, and 2% Native American. Family income averaged \$45,277/annum ($SD = \$15,454$), distributed across all categories of response. On this and other indicators of SES (e.g., parent education and occupation) the three samples did not differ appreciably. The California Achievement Test scores for this sample were also, as should be expected from the income data presented above, well above average. Students scored between the 70th and 73rd percentile in performance in verbal, math, and composite CAT scores. While far better than average, these scores are inferior to the minimum 94th percentile scores posted by the average gifted student. Thus, all three samples were equivalent on the important dimension of SES and were different on the dimension of measured ability. Some differences in gender and race were noted between the gifted and competent samples, but initial analyses of Phase I data found these factors did not contribute to group differences in a consistent

way on measures of self-concept or attributional style.

Instruments

Talent Search Questionnaire (TSQ): Demographic and attitudinal data for the gifted samples were obtained from the TSQ, which all students who participate in the annual Talent Search are asked to complete. Non-gifted students completed a brief version of the questionnaire so that equivalent demographic and attitudinal information could be obtained.

Self-Description Questionnaire II (SDQ II): The 150-item SDQ II measures ten components of self-concept derived from Shavelson's theoretical model (Shavelson et al., 1976) in addition to global self-concept. The response scale of the SDQ II ranges from "1 = false" to "6 = true." Subscale scores are routinely standardized to have a mean of 50 and a standard deviation of 10. High scores indicate high levels of self-concept. The ten measured components consist of the following subscales: Mathematics, Verbal, General School, Physical Abilities, Physical Appearance, Relationships with Opposite-Sex Peers, Relationships with Same-Sex Peers, Relationships with Parents, Honesty, and Emotional Stability. Marsh, Parker, and Barnes (1985) reported that the coefficient alpha reliabilities of the 11 subscales range between .78 and .90 (median alpha = .86). In terms of validity, Mathematics, Verbal, and General School self-concepts have been shown to be significantly correlated with academic criterion measures of Mathematics, English, and Reading achievement (Marsh et al., 1985).

Attributional Style Questionnaire (ASQ): An expanded version of the original 12-item ASQ (Peterson et al., 1982) was used to assess attributional tendencies. The revised ASQ consists of twenty-four hypothetical events, each with three questions assessing internality,

stability, and globality of attributions. Stimulus events are distributed across a completely crossed matrix described by situation (achievement or social) and outcome (success or failure). Thus, there were six events within each matrix cell (e.g., social success) on the version of the ASQ used in this study. Students responded to each item on a 1 - 7 scale. On the Internality dimension, 1 = "Totally due to other people or circumstances" and 7 = "Totally due to me." For the Stability dimension, 1 = "Will never again be present" while 7 = "Will always be present." For the Globality dimension, 1 = "Influences just this particular situation" and 7 = "Influences all situations in my life." Peterson et al. (1982) reported five-week test-retest reliabilities for the original twelve-item ASQ ranging from .57 to .70 for the success and failure outcome dimensions of internality, stability, and globality as well as for composite positive and negative scores. A number of studies (e.g., Peterson et al., 1982; Seligman & Schulman, 1986) have found the ASQ to be moderately internally consistent, with coefficients ranging from a low of .44 to .75. (Peterson et al., 1982; Seligman & Schulman, 1986).

Procedure.

All students were initially contacted by mail in early May, 1986 and were asked to participate in a study of "the way adolescents think about themselves." Informed Consent Documents described the nature of the study, the measures that would be used and the time requirements over each of the three waves of the assessment (between 45-60 minutes). Students were included in the mailing of study materials if they returned the signature page of the Informed Consent Document signed both by themselves and their parent(s) or guardian(s).

Phase I study materials were mailed out at the end of May. Packets

included a cover letter, the SDQ II, the ASQ, and a pre-paid return envelope. In addition, the competent sample received a revised version of the TSQ. Gifted students had already completed this survey. Phase II and III mailings consisted of a cover letter, the SDQ and ASQ. Phase II mailings also included a checklist of summer activities. Again, pre-paid return envelopes were provided. Phase II and III mailings were forwarded to all Phase I respondents. Phase II mailings were initiated in September, 1986, between one and two months subsequent to the SRP, and Phase III mailings were initiated in late January, 1987, between six and seven months subsequent to the SRP. While analyses of Phase I and II data have been completed, analyses of all three waves of data are just beginning.

At each stage of the assessment, non-respondents received two mail follow-ups. Students were sent reminder post-cards after two and four weeks had passed without their materials being received. Virtually all completed packets of survey materials in each Phase of this assessment had been received by three weeks after the initial mailing. Also, at each stage of the study students were reminded of the voluntary nature of thier participation and that all data provided would be treated as confidential.

After receipt of materials, data forms were hand edited, keypunched and verified and transformed into SAS data sets in which all created indices were generated. At the close of Phase III key entry and edit activities, all records linking student identification with unique assigned identification numbers were destroyed. Participant names and addresses will be retained until we have forwarded them a study summary as promised in our initial letter of solicitation. These data will then be destroyed.

RESULTS

Since the race and gender composition of the gifted and non-gifted samples differed, analyses were conducted to determine whether such differences affected self-concept or attributional style both within and between groups. Multivariate analyses of variance were calculated on global measures of self-concept, the ten component measures of self-concept as measured by the SDQ, and on the 12 primary subscales of the ASQ. Analyses investigating group by race and group by sex differences were generally equivocal. Statistically significant differences for race and sex and their interaction with the group factor were virtually absent across all measures. Similarly, differences as a function of race or sex within samples were virtually absent. These variables were dropped from consideration in further analyses.

Phase I

Initial multivariate analyses of variance (MANOVA) were separately generated for the twelve subcomponents of the ASQ measure and the ten domain specific components of self-concept as measured by the SDQ II to determine if there were extant differences between the two gifted samples. Results of these analyses were heartening in that no statistically significant group differences emerged on either the univariate or multivariate analyses of these measures. As a result, information from the two gifted samples was pooled in analyses of Phase I data.

Self-Concept. Univariate analysis of variance (ANOVA), did not yield a statistically significant difference on the global measure of self-concept between gifted and competent groups.

In order to ascertain whether gifted and non-gifted adolescents differed in multidimensional self-concept, a MANOVA was performed with

group membership as the independent variable and the ten SDQ subscales as dependent measures. The results of this analysis are presented in Table 1, along with the means and standard deviations for all the subscales.

A significant effect for group membership was found ($F = 12.03$, $df = 20,526$, $p \leq 0.001$). Univariate follow-up tests revealed that gifted students had significantly higher self-concepts in Verbal, Math, and General School domains. They also evidenced greater self-concepts in the area of Honesty than did competent comparisons. Non-gifted students were found to have higher self-concepts in Physical Ability, Physical Appearance, Opposite-Sex Relationships, and Same-Sex Relationships. Only the domains of emotional stability/maturity and relationship with parents did not statistically differentiate between the two groups.

Thus, as expected, while significant differences in overall self-concept were not found, strong differences for the components of self-concept were. To explore possible differences in the structure of self-concept, simultaneous multiple regression analyses were performed for both groups with the SDQ II Global Self-Concept subscale as the criterion and the other ten SDQ II subscales as predictor variables. The results of these analyses are depicted in Table 2.

Global self-concept was related to students' perceptions of their emotional stability/maturity and the quality of their relationships with same-sex peers and parents for both gifted and competent students. However, there were marked disparities between the groups on the manner in which a number of self-concept domains related to global self-concept. For example, self-concept in the area of opposite sex relationships was significantly and positively related to global self-concept among competent

students and somewhat negatively related ($p \leq .08$) to global self-concept among the gifted sample. Alternatively, self-concept in the areas of verbal and math abilities were significant predictors of global self-concept among the gifted but not among the competent samples.

Attributional Style. Similar to the analysis of group differences on the SDQ II, a MANOVA was performed on the 12 ASQ subscales with group membership as the independent variable. The test of the overall model proved significant ($F = 2.08$, $df\ 12,178$, $p \leq 0.02$). Subsequent investigation of the subscales with univariate F tests are presented in Table 3 and reveal that internality and globality attributions for social success situations accounted primarily for the finding of significant difference. Non-gifted compared with gifted students were significantly more likely to perceive the cause for social success as internal and marginally more likely to perceive the cause as a pervasive one that would be present in other situations. These data fit nicely with the findings from analyses of the self-concept data which portrayed competent students as having substantially better social self-concepts than gifted students, while gifted students boasted significantly superior self-concepts related to academic pursuits. It is also noteworthy that these findings emerged against a backdrop in which the social and emotional difficulties evidenced by gifted students have been attributed to their being different from others.

What is perhaps most interesting is that in instances of social failure, gifted students were not more likely to internalize the blame than were competent students. However, they were much more likely to see as external to themselves, as well as less pervasive, the cause for their social successes. While this pattern of attribution is not as destructive or

self-defeating as if they had also internalized the blame for social failures, it does indicate a less than optimal means of attributing the causes for success. Group differences in achievement oriented activities were not obtained.

Phase II

The goal of Phase II analyses was to determine what overall changes in self-concept and attributional style are manifest among adolescents over a four month period, and more specifically the extent to which participation in a rigorous academic program like TIP's SRP effects such change. Recall that in Phase I we observed that the self-concept domains related to social pursuits were significantly lower for academically gifted students relative to their academically competent agemates. Consonant with these self-concept findings we also observed that, in an attributional sense, some of the cause for this social malaise may stem from the fact that, relative to competent agemates, academically gifted students internalize less the social successes they experience and are less likely to see the factors leading to such success as present in other areas or situations in their lives.

Because the SRP allows students, many for the first time, to get together with intellectual and emotional peers of the same age, these attributional tendencies may be moderated. Thus, a key concern of Phase II analyses was whether differences on the social success components of the ASQ become manifest for TIP participants relative to others and, more specifically, whether TIP participants with initially low global self-concepts improved disproportionately compared to those with initially higher global self-concepts.

Initial analyses of Phase II data focused on identifying the

characteristics of the primary measures used for this population and on determining if gifted-nonattending (GNA) and academically competent (AC) students' summer activities led to differential changes in self-concept or attributions. Results of these initial analyses are described below.

Test-Retest Reliability and Internal Consistency. Since we had adapted the ASQ for use on this relatively young population and doubled its length, it was important to determine both the reliability and internal consistency of the measure. The reliability coefficients were calculated on measures administered approximately four months apart. The average test-retest reliability coefficient for the twelve component measures of the ASQ was 0.52. Coefficients ranged from .44 to .62 for the group as a whole. Test-retest coefficients calculated separately for gifted and competent groups do not differ appreciably. These data are generally consistent with those originally reported by Peterson et al (1982) for a five-week test-retest period. The internal consistency demonstrated across the twelve primary subcomponent measures as calculated by Cronbach's alpha was consistently strong: .65 in Phase I and .72 in Phase II. Again, no differences were observed between groups.

The test-retest reliability of the self-concept measure (SDQ II) was appreciably better. Here, the average test-retest reliability coefficient for all eleven self-concept scales was .76 and ranged from .68 for General School Self-Concept to .87 for the self-concept domain focusing on Physical Abilities. Again, measurement characteristics did not differ appreciably across groups. Measures of internal consistency across the eleven component measures groups of the SDQ II were also strong. The average alpha coefficient was 0.82 in Phase I and 0.83 in Phase II. No group differences were noted.

Thus, both measures demonstrated very good internal consistency and the SDQ II boasted reasonably strong test-retest reliability over a protracted period of time. The test-retest reliability of the ASQ, although acceptable, was not great; however, attributional tendencies may not be, by their very nature, terribly stable over time and experience. The crucial issue for this study is whether the measure is sensitive enough to detect group differences. Given the characteristics of the measure we feel that it is sufficient to provide a conservative assessment of changes in attributional tendencies.

Summer Activities. The intent of these internal analyses was to investigate whether participation of GNA and AC students in other academic, sports or special interest camps affected self-concept or attributions. Self-reports on the supplementary Phase II Summer Activities Questionnaire were used to classify students' reported pursuits. Repeated measures analyses were effected both within and between the GNA and AC samples. Analyses within groups showed no differential changes in any measure as a function of students' summer activities. Contrasts across groups yielded no significant activities x time or group x activities x time interactions. Student activities were then dropped from further analytic consideration.

Overall Changes in Self-Concept. Changes in self-concept were analyzed by means of 3x3x2 repeated measures ANOVA in which there were two between factors -- group (GA, GNA, AC) and global self-concept (lowest 30%, medium 40%, and highest 30% of all scores), and one within factor -- the repeated (twice) measurements obtained. Analysis summary data are presented in Table 4. Figure 1 presents Phase II group means.

The repeated measurements factor yielded significant interactions with the between groups factors on eight of the 33 possible occurrences (24%). The direction of the means on interactions was consistent. In the three instances in which the repeated measures factor interacted with group (Global Self-Concept and Honesty and Relationship with Same Sex), GA and GNA self-concept scores generally decreased over time while AC scores remained the same or increased slightly. On the four instances in which self-concept interacted with the repeated measures factor (Global, Relationship with Parents, Emotional Maturity, Relationship with Same Sex) the effect suggested a type of regression to the mean. Those with initially low self-concepts increased their scores over time; those with initially high self-concepts showed a decrease in scores over time; and the scores of those with initially moderate self-concepts showed a remarkable stability over time. In the two instances in which we see an interaction of group, self-concept and the repeated measures factors (Physical Ability and Honesty) we again see an attenuation in differences over time as a function of self-concept. This attenuation is greatest in the gifted-not-attending group (GNA) and least in the gifted-attending group (GA).

In spite of these observed differences over time, between-group differences in self-concept are little different from those described in Phase I analyses. Perhaps most important is that the prediction of a main effect and an interaction which would demonstrate increases in global self-concept and social aspects of self-concept, especially among initially low self-concept program participants, do not obtain. In fact, given the tendency for gifted participants to show a decrease in scores and

competent students to show a slight increase over time, significant group differences obtain on nine of the ten component measures of self-concept as well as on global self-concept. Invariably, competent students' self-concept is significantly greater on social and physical components as well as on global self-concept, compared with gifted attendees and nonattendees. On academic components of self-concept (i.e., Math, Verbal, and General School Activities), gifted students demonstrate significantly higher scores than do competent comparisons. Both gifted-attending and not-attending students show virtually identical self-concept scores on each of the eleven indices measured. No group differences were obtained on the measure of emotional stability/maturity.

Thus, the data on self-concept do not support the prediction that consensual validation would improve self-concept. Further, the data do not support the predicted interaction between group and self-concept.

Attributional Patterns

The twelve basic subscales of the ASQ were analyzed by means of a 3x3x2 Repeated Measures ANOVA with group and global self-concept as between factors and the repeated measurement as a within group factor. ANOVA results are presented in Table 5. Figure 2 presents ASQ component mean scores for group over both phases of the survey.

While the repeated measures factor entered into significant interactions with the between-group factors it did so with far less frequency and consistency than observed previously on the component measures of self-concept. This may be due in part to the lower reliability of the measures of the ASQ which in turn may be due, at least in part, to the greater situational determination of causal ascriptions. At any rate, only five of the 36 potential within-between factor interactions reached

levels of statistical significance (14%).

Three interactions of the repeated measures and group factors were observed. In partial support of the study objectives we see that the extent to which SRP participants internalized the blame for social failures decreased dramatically over time ($\bar{X} = 3.7$ to 3.2) whereas both gifted ($\bar{X} = 3.5$ to 3.4) and competent ($\bar{X} = 3.8$ to 3.6) students' scores remained relatively constant. On the measure of globality for social failure situations, both gifted samples expressed a decreased belief in the extent to which they perceived the cause of social failure to be pervasive in their life ($\bar{X}_{GA} = 3.4$ to 3.0 ; $\bar{X}_{GNA} = 3.5$ to 3.2) while competent students' belief about the globality of the cause for social failure remained virtually constant ($\bar{X} = 3.3$ to 3.4). Other interactions observed between group, self-concept and the repeated measures factor neither supported nor contradicted study hypotheses. Rather, these mixed and between group effects illuminated the role of self-concept as a mediator of attributional style. In general, we see that as self-concept increases, the internality, stability and globality of attributions for success increase; for failure situations the internality, stability and globality of attributions decreases as self-concept increases. Thus, students in general seem to demonstrate relatively healthy attributional styles. Again, the sought after group x self-concept (x time) interactions supporting study hypotheses did not obtain.

Differences Across Levels of Measured Ability

It is clear from the results described that some of the differences under investigation may have been obscured by factors outside the control of the study. Also, creating a tripartite hierarchy on the basis of global self-concept and relating it, as an independent variable and as a factor

interacting with sample group generated less than completely satisfactory answers to study questions. To investigate group differences further, an alternative tack was adopted.

The tendency among extremely gifted adolescents to be vulnerable to psychosocial disorders was first noted by Hollingworth (1942), who found that exceptionally gifted adolescents ($IQ \geq 180$) had difficulties forming friendships with their agemates and, in fact, in establishing any congenial relationships whatsoever. As a result of the ensuing social isolation, these adolescents evidenced highly negative attitudes toward authority. In other research, while the highly gifted were described by their teachers as being especially ambitious, dependable, energetic, honest, original, etc., they were also found to have more problems of adjustment than a group falling just below them in terms of IQ measures (Lewis, 1983). On the basis of these and similar findings, it has been suggested that there is an "optimal intelligence" beyond which gifted individuals function at a risk of psychosocial maladjustment (Hollingworth, 1942).

Similar findings by Terman and Oden (1947) showed that highly gifted children ($IQ \geq 170$) among other achievements, graduated from high school at a younger age and were twice as likely to earn an "A" average as those more moderately gifted ($130 \leq IQ \leq 169$). At the same time, the highly gifted group was twice as likely to experience poor social adjustment. In a similar study comparing extremely gifted with moderately gifted children, Barbe (1964) found that the more gifted children were more exuberant, talkative, cheerful, quick and alert. However, parents cited more behavioral problems and nervousness among these children than did parents of the less gifted children. Similarly, previous work by Shaywitz et al (1986) demonstrated clear differences within a group of gifted

adolescents. Those above the median WISC-R total IQ score (i.e., 140) showed greater levels of maladjustment on both behavioral and affective indices than those scoring below the median. Following this line of reasoning suggesting an optimal level of giftedness, both gifted samples were split at the median total SAT score (i.e., 1030).

Self-Concept. For Phase I analyses, 2x2 MANOVAs (Gifted Group x SAT score/ability group) were calculated separately for the ten subcomponents of self-concept measured by the SDQ, global self-concept and the twelve primary subscales of the ASQ. No differences emerged on either the multivariate or univariate tests as a function of group (e.g., MANOVA $F = 1.05$, $df\ 10$, $p > .40$). However, several differences obtained for the ability factor. Extreme ability compared to high ability students indicated that their self-concept was significantly lower in the domains of Relationships with the Opposite Sex ($X = 50.0$ vs 44.4 , $p < .001$) and with Same Sex Peers ($X = 51.3$ vs 44.5 , $p < .001$). Further, highly gifted students demonstrated significantly lower self-concept scores on measures of Emotional Stability/Maturity ($X = 51.0$ vs 47.0 , $p \leq .003$), Physical Ability ($X = 50.3$ vs 45.6 , $p \leq .002$) and marginally significant differences ($p \leq .07$) on Physical Appearance ($X = 49.4$ vs 46.9). Highly gifted students demonstrated significantly higher self-concept than moderately gifted respondents only in Math abilities ($X = 53.2$ vs. 50.7 , $p \leq .04$), and this effect was modified by a significant group x ability interaction such that for SRP participants, math self-concept differed across ability level ($X = 49.8$ vs. 54.6 , $p \leq .005$). No such difference was observed for gifted students not attending the summer program ($X = 51.3$ vs. 51.7 , $p \leq .95$). Overall, results of the MANOVA for the ability factor was significant ($F = 5.01$, $df\ 10,198$, $p \leq .001$).

Analyses of global self-concept show similar findings. While differences did not obtain as a function of group alone or group interacting with measured ability, a strong effect was observed for measured ability alone. Here, higher ability students demonstrated a lower global self-concept ($F = 6.77$, $df\ 1,209$, $p \leq .001$) than did lower ability students ($\bar{X} = 50.8$ vs 47.1).

Results were consistent across both assessment phases. Means on all self-concept measures for both phases of the research are presented in Table 6 and depicted graphically in Figure 3. Notice that this table also includes for visual comparison, the data from academically competent students. An additional MANOVA conducted on the components of the SDQ-II using ability dimension as an independent variable -- competent, high ability and extreme ability -- demonstrates the clear superiority of competent vs. extreme ability students in virtually every non-academic domain. While competent students are more similar in self-concept to moderate ability gifted students they still boast significantly greater self-concept in both the social and physical domains of activity.

These data fit nicely with the model of "optimal" intelligence originally proposed by Hollingworth and demonstrate that in this very able group of students, those with the greatest level of ability also seem to have the greatest self-concept problems, especially in the domains related to social functioning.

Attribution. Phase I data from the ASQ were analyzed similarly. Table 7 presents summary data of means for both phases by group; Figure 4 represents these data graphically. The only statistically significant differences observed on any of the twelve subscales of the ASQ obtained on the three social success indices. Here, extremely able students

internalized the causes for their social success less ($F = 4.69$, $df = 1,187$, $p \leq .03$), and saw the cause as less stable ($F = 4.34$, $df = 1,187$, $p \leq .04$) and as less global ($F = 4.24$, $df = 1,187$, $p \leq .03$) than their less gifted counterparts. In essence, extremely gifted students are demonstrating quite clearly the self-effacing and somewhat nonadaptive strategy of not taking credit for their social successes. These data parallel and accentuate some of the differences described for group by self-concept analyses. Phase II repeated measures analyses of the data as a joint function of group GA, GNA and measured ability (high, low) were undertaken to determine if the elusive effect of improvement as a function of TIP participation might be obtained within this conceptual framework. Alas, no such differences obtained. Results of the $2 \times 2 \times 2$ repeated measures ANOVAS simply replicated findings described in detail under Phase I results.

Again, competent students' data are presented in Table 10 for comparison. These students resemble closely high ability students on virtually every attributional measure.

DISCUSSION

The present study attempted to describe the multidimensional self-concept and attributional tendencies of academically gifted and competent adolescents, as well as to chart changes in these characteristics among gifted adolescents occurring as a result of the consensual validation obtained during participation in an academically rigorous three-week Summer Residential Program. Put simply, assessments conducted before the treatment indicated that while global self-concept between the groups did not differ significantly, subcomponents of self-concept did. As might be expected, academically able students boasted significantly higher levels

of self-concept in areas related to academic performance (Verbal, Math, and General School Abilities) than academically competent students and significantly lower self-concepts in social and physical domains (Relationship with Same and Opposite Sex Peers and Parents, and Physical Appearance and Abilities). Also, specific domains of self-concept were predictably related to overall self-concept, thereby demonstrating that gifted and competent students weighed heavily their areas of strength in order to arrive at similar global levels of self-concept. These findings are completely consistent with several other studies (e.g., Winne et al., 1982) which have demonstrated that while overall self-concept may be similar across levels of ability, sharp differences in the components comprising self-concept may obtain.

In line with the observed disparity in social self-concept evidenced between gifted and competent samples, we expected that attributional patterns would also differ for success and failure outcomes in social situations. While differences were obtained on measures of the extent to which respondents internalized and perceived as global the cause for social success, no differences were observed in the area of social failure. Thus, while competent students were more likely to perceive the cause for social success, as internal and generally more pervasive in other areas or situations in their lives than were gifted students, they were not more likely to adopt an adaptive attributional framework regarding social failure. Here, both competent and gifted students were equally likely to externalize the perceived cause for failure, as well as see it as not terribly stable. In the areas of achievement success and failure, gifted and competent groups both responded similarly, demonstrating relatively healthy attributional patterns, tending to internalize success relative to failure.

Failure to find expected differences in social failure or achievement situations may obtain, in part, from the fact that the competent group was not composed of average students. In order to control for effects due to different contextual variables, specifically socioeconomic status, competent students were selected from schools in middle to upper middle class communities. These students boasted relatively strong records of success, averaging well above the median on ability testing (i.e., 70-73rdtile), and good school performance both in terms of grades and behaviors. Relatedly, achievement situations presented as part of the ASQ were not focusing only on academic outcomes. In addition, achievement situations presented as part of the ASQ were general in form and format not focusing only on academic outcomes, (e.g., You apply for a position you want badly; You get a raise in your allowance vs. you receive a very high grade on a test). Taken together, these factors may have masked differences that might otherwise obtain for attributions related to success and failure situations.

Phase II analyses focused on assessing the changes occurring in the self-concepts and attributional tendencies of study participants. Of special interest were the changes occurring among gifted students subsequent to their participating in an academically rigorous Summer Residential Program. We expected to see positive changes in self-concept especially on measures related to social self-concept among SRP participants. These expectations derive from both casual observation and exploratory follow-up with SRP participants which indicates that for many SRP participants the summer experience forms the basis for developing a social support network of peers (e.g., Kimble and Sawyer, 1984). In general, students leaving the SRP maintain multiple friendships with other participants interacting

frequently by phone and with personal visits. Parents describe the correspondence between these adolescents as voluminous and the phone bills as extraordinary. We expected that adolescents placed with other adolescents, many of whom share the feeling of differentness or relative isolation because of their ability, may share a type of consensual validation and these feelings might decrease. Clearly, the number, closeness and longevity of friendships that began at the SRP seem to indicate that being with like others does fill a void and seems to have a positive effect.

We then attempted to see whether the process observed each summer had any measurable effects on self-concept or related attributional tendencies. In general, analyses indicated that self-concept and components of self-concept were relatively stable over time. However, small decreases in the academic components among both gifted samples and moderate increases in the social components of self-concept among competent comparisons yielded statistically significant differences between competent and gifted groups on the measure of global self-concept over the course of the study. Otherwise, between group differences found in Phase I were generally repeated. These data indicate that participation in the SRP did not enhance social self-concept. In part, emergent differences may have been masked by procedural or maturational problems. Recall the tendency of both gifted groups' scores to decrease over time while competent students scores tended to remain constant or increase slightly. In fact, among competent students a sharp rise was noted among relationships with the opposite and same sex, possibly indicating real social developmental differences between groups. Similarly, gifted students, especially those attending the SRP, showed consistent albeit small, decreases in components of academic self-concept. Again, this may be

attributable to the fact that the SRP, with its opportunity to gain social consensual validation, is also a place for students to compare their abilities with a very new reference group -- especially able peers. This coupled with the fact that Phase II assessments were carried out during the beginning of a new academic year in which new materials had just been presented for mastery may have suppressed expressed self-concept in these traditionally strong areas and in turn, suppressed global self-concept.

While data concerning self-concept did not provide any support for our hypothesis that consensual validation processes taking place in the context of a short-term academic intervention would have measurable effects on relatively stable personologic measures of self-concept, attributional data provided some tentative support for the personal effectiveness of such an intervention. Analysis of the twelve primary components of the ASQ were generally the same across both phases of the study. No systematic differences were discovered between competent, gifted-attending and gifted-nonattending in the prescribed locus, stability, or globality of causal attributions for achievement success or failure situations. Consistent with findings of lower social self-concept among gifted relative to competent students, the former were less likely than the latter to internalize or perceive as global the causes for social successes. Also, as might be expected, regardless of group, as global self-concept increased so too did the tendency to see both social and achievement success as internal, stable and global and social and achievement failure as external, unstable and situation specific. These data are not at all surprising and simply document the close relationship between self-concept and attributional patterns.

Significant change in the attributional patterns for ascriptions of cause was noted for social failure situations. Here, the extent to which SRP participants internalized the blame for social failures decreased dramatically over time whereas gifted and competent comparisons showed little movement. On the measure of globality for causes present in social failure situations, SRP participants as well as the gifted-nonattending sample demonstrated a significant decrease in the extent to which they felt the cause for social failure was pervasive relative to competent comparisons whose scores remained stable over time. Thus, after participation in the SRP, gifted students demonstrated a marked increase in the degree to which they made adaptive attributions regarding social failure situations. Again, while it is difficult to attribute the cause for this change directly to SRP participation, the difference observed is consistent with expectations.

The virtual absence of group $\times$ global-self-concept ($\times$ time) interactions failed to support strongly the relationships hypothesized within measures of either multidimensional self-concept or attributional style. For each of the components of both measures, the level of association with global self-concept was generally high and global self-concept in turn was consistently and strongly related to perceptions of the internality, globality and stability of cause across social and achievement success and failure situations. Also, the correlation between domains of self-concept and global self-concept were consistently moderate to high across both phases of research, ranging from 0.20 to 0.62 ($x = 0.43$). These interrelationships, in and of themselves, provide interesting data concerning the nature of self-concept and attributional style among adolescents. However because of their overlap, they may mask effects

that might otherwise be observed regarding changes attributable to consensual validation processes as part of a Summer Residential Program. For these reasons an alternate analytic tack was pursued.

The hypothesis that there is an optimal level of intelligence or ability beyond which individual's vulnerability to behavioral and affective problems or maladjustment has been documented by several researchers (e.g., Hollingworth, 1942; Terman and Oden, 1947; Lewis, 1983; Barbe, 1964; and Shaywitz et al., 1986). While we have presumed in the study that ability is related in a curvilinear manner to self-concept and attributional style, the primary analytic thrust was to assess differences in these constructs across one broad ability dimension and measured self-concept. However, the ability dimension employed differentiated between good and excellent abilities and as such may have been too broad to identify differences occurring within the gifted population as a function of surpassing an optimal level of intelligence/ability.

Internal analyses compared and contrasted the scores of academically gifted students by splitting at the median the total SAT scores for the two gifted groups, resulting in "high" and "extreme" ability groups. Initial analyses employing both gifted groups demonstrated no effect for this variable. However, across ability groups several important differences were noted. These differences were parallel but were more pronounced than differences observed when levels of global self-concept were employed as categorical independent variables. In both phases of the research, high ability students demonstrated greater social and physical self-concepts than did extreme ability comparisons. High ability students evidenced greater self-concept than extreme-ability comparisons in the areas of

Relationships with Same and Opposite Sex Peers, Physical Appearance and Physical Ability. Extreme ability respondents demonstrated marginally greater self-concept than their lesser ability counterparts only in the areas of mathematics abilities and this only in Phase I, just prior to reporting to the SRP to begin their intensive study (usually in math). Global self-concept was significantly greater for high as compared to extreme ability respondents in Phase I of the research, although this difference was attenuated in Phase II.

Comparisons between the competent student and both high ability level groups yielded findings similar to those reported previously for groups and self-concept contrasts. Competent students had greater social and physical self-concepts and lower academic oriented self-concepts than either high ability group across assessment waves. However, important to the notion of optimal level of self-concept, competent students' global self-concept, while somewhat greater, resembled that of the high ability group in Phase I ($p < .10$) and was only marginally different in Phase II ($p < .10$). It was significantly greater than that of the extreme ability group across both phases of the research.

In the area of attributional tendencies, we again see the same significant effects as under the group x self-concept analyses but the magnitude of the effects are pronounced. Compared with high ability students, extreme ability students internalized, saw as less stable and as less global the causes for their social successes. The attributional patterns observed for competent students resembled those of high ability students much more than those of extreme ability students.

While these analyses in and of themselves do not lend additional support to the original purpose of the study, the data are important for

other reasons. They indicate that developed ability and not self-concept may be the proper mediator variable to be used in analyses of this type. However, caution needs to be exercised. While acting as a mediator of self-concept and attributional tendencies, measured ability is at once both operationally easier to define but more ambiguous conceptually than the more tangible measure of self-concept. For example, in this study the correlation between measured ability (i.e., SAT or CAT scores) and global self-concept were - 0.18 ($p < .003$) in Phase I and -0.20 ($p < .001$) in Phase II. Clearly, while significantly related, the shared variance between the measure of ability employed and self-concept is small. Further research is necessary to better delineate the relationships between measured ability, cognitive style and affective status.

Implications:

While the research demonstrates clear differences in adolescents' self-concept as a function of measured ability, and differences in attributional style as a function of measured ability and self-concept, there were only some tentative findings supporting the notion that consensual validation obtained during the course of a summer residential experience ameliorated maladaptive cognitive styles in either self-regard or causal analysis. It may be that a three week session with intellectual-emotional peers is insufficient to yield measurable change on these indices. Yet, the clear track record of programs like this one documented by both parent and participant reports (e.g., Sawyer and Kimble, 1984) in creating long-lasting and close social networks among participants, indicates that such consensual validation does occur and has positive effects on the individuals' lives. It is possible that while such positive change does occur, the impact on ingrained self-concept is small. An individual's

notion of his or her day-to-day social worth may not be affected because of the existence of a close friend, hundred of miles away. Rather, self-concepts are probably dominated by the day-to-day perception of "differentness" which does not disappear when one returns to one's normal environment. However, while self-concept may be relatively robust, attributional stance seems more malleable to the experience of consensual validation. Recall that subsequent to the summer experience, gifted students decreased the extent to which they internalized and perceived as global the cause for failing socially. Whether this change is a long-lived one and whether it generalizes to self-concept remains to be seen and will be investigated in Phase III analyses.

The data reported also provide substantial support for the notion of an optimal level of intelligence above which social and emotional difficulties become more apparent. Data between extremely able and lesser ability gifted students show marked differences, favoring the latter group on measures of both self-concept and causal ascriptions. While the hypothesized curvilinear relationship between ability and social-emotional health seems bolstered by these data, we cannot specify as yet the level of ability at which extremely gifted adolescents become more vulnerable to risk. Also, because no measures of pathology were included in the study we cannot say whether the decreased self-concept or less adaptive attributional strategies manifested by extremely able students is indicative of behavioral or affective disorders, or simply of relative malaise or isolation. However, other studies (e.g., Shaywitz et al, 1986) using similarly defined samples, do indicate a real risk to extremely able students for affective and behavioral disorders. Much additional research is required in this area. Phase III assessments will serve as a first step

in pinpointing the developmental course of self-concept and attributional patterns among competent, highly able and extremely able students and assist in determining, over approximately an eight-month period, the extent to which observed differences are relatively stable over time.

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Table 1
Components of Self-Concept Group 1

<u>Component</u>	<u>Gifted Mean (SD)</u>	<u>Competent Mean (SD)</u>
Verbal Ability	51.3 (9.4)	46.4* (11.0)
Math Ability	51.9 (8.2)	45.3* (11.7)
General School Ability	52.7 (7.5)	44.3* (12.7)
Relationship with Same Sex Peers	48.8 (10.4)	53.4* (9.0)
Relationship with Opposite Sex Peers	48.1 (10.1)	54.7* (7.4)
Relationship with Parents	49.8 (9.8)	51.9 (10.2)
Physical Appearance	48.9 (9.7)	54.5* (8.8)
Physical Abilities	48.7 (10.3)	54.6* (7.7)
Honesty	51.5 (8.4)	47.6* (12.9)
Emotional Maturity	49.9 (9.7)	51.1 (11.0)
Global Self-Concept	49.3 (9.7)	51.8 (10.1)

* = $p \leq .01$

Table 2
Simultaneous Regression Analyses Predicting
Global SDQ Self-Concept for Gifted and
Non-gifted Groups with SDQ Subscales

<u>Predictor Variables</u>	<u>Gifted</u>		<u>Competent</u>	
	<u>Beta</u>	<u>t</u>	<u>Beta</u>	<u>t</u>
Verbal	0.15	2.67**	0.15	1.79
Math	0.19	2.84**	-0.06	-1.07
General School	0.11	1.41	0.04	0.39
Physical Abilities	0.07	1.31	-0.05	-0.54
Honesty	0.10	1.49	0.12	1.75
Emotional Stability	0.31	5.41***	0.32	4.07***
Physical Appearance	0.25	3.99***	0.11	1.21
Opposite-Sex Relationships	-0.17	-1.79	0.48	4.11***
Same-Sex Relationships	0.27	2.83**	-0.20	-2.10*
Parent Relationships	0.12	1.99*	0.41	5.20***
Intercept	-18.18		-10.11	

* $p \leq 0.05$

** $p \leq 0.01$

*** $p \leq .001$

Table 3
Multivariate Analysis,
Means and Standard Deviations of
ASQ Subscales by Group

<u>Subscale</u>	<u>Gifted Mean (SD)</u>	<u>Non-gifted Mean (SD)</u>
<u>Achievement Failure</u>		
Internality	4.64 (0.98)	4.73 (1.06)
Stability	4.24 (0.91)	3.97 (0.91)
Globality	3.95 (1.05)	3.93 (1.10)
<u>Social Failure:</u>		
Internality	3.50 (0.95)	3.65 (0.92)
Stability	3.77 (0.83)	3.82 (0.98)
Globality	3.49 (1.03)	3.24 (1.24)
<u>Achievement Success:</u>		
Internality	5.86 (0.79)	5.80 (0.95)
Stability	5.71 (0.67)	5.64 (0.77)
Globality	4.77 (1.05)	4.82 (1.08)
<u>Social Success:</u>		
Internality	5.01 (0.93)	5.58*** (0.97)
Stability	5.41 (0.70)	5.41 (0.87)
Globality	4.50 (0.93)	4.82* (1.00)
Total Model (Wilks' Lambda)		2.08*

* $p \leq .05$

*** $p \leq .001$

Table 4
Summary Table for 3x3x2 Repeated Measure
Analysis of Variance for the SDQ

Component	Between Ss		GxS	TimexG	Within Ss	TimexGxS
	Group (G)	Self-Concept (S)			TimexS	
Global Self-Concept	4.6*	227.2***	2.5*	3.1*	8.2	0.4
Verbal Abilities	6.3**	16.5***	0.6	0.4	1.0	1.3
Math Abilities	15.7***	9.0***	0.8	0.1	0.6	0.8
School Abilities	22.3***	31.6***	1.5	3.0	0.2	0.8
Relationship with:						
Parent	4.1*	38.7***	0.8	1.6	5.3**	1.8
Opposite-Sex	17.3***	24.2***	1.1	0.3	0.1	0.6
Same-Sex	12.2***	39.2***	0.8	4.0*	5.4**	1.3
Physical Abilities	11.6***	24.7***	1.5	1.2	1.6	3.1*
Physical Appearance	17.0***	55.5***	0.9	0.8	0.6	1.0
Honesty	3.1*	35.3***	3.0*	3.1*	1.9	2.7*
Emotional Maturity/ Stability	1.7	55.3***	0.4	0.5	7.2***	1.6

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

Table 5
Summary Table for 3x3x2 Repeated Measures
Analysis of Variance for the ASQ

Measures	Between S s			Within Ss		
	Group (G)	Self-Concept (S)	GxS	TimexG	TimexS	TimexGxS
<u>Social Failure:</u>						
Internality	1.6	1.9	0.9	3.4*	0.9	0.5
Stability	1.7	5.5**	1.6	0.4	4.2**	0.8
Globality	0.3	2.4*	1.7	3.3*	0.1	0.4
<u>Achievement Failure:</u>						
Internality	2.2	0.5	2.5	1.5	0.4	1.1
Stability	0.8	11.3***	1.3	1.1	0.3	4.6**
Globality	0.6	9.2***	2.9	1.6	0.2	1.6
<u>Achievement Success:</u>						
Internality	0.1	33.9***	2.0	3.1*	2.7*	1.2
Stability	0.9	11.2***	0.3	1.1	0.5	0.4
Globality	0.8	7.9***	0.8	1.5	1.0	1.1
<u>Social Success:</u>						
Internality	7.5***	12.4***	2.2	0.2	0.5	1.2
Stability	0.8	8.7***	0.8	2.4	0.6	0.9
Globality	4.6*	9.9***	1.6	0.9	2.6	0.3

* p < .05
 ** p < .01
 *** p < .001

Table 6
Mean Scores For Phases I & II
Across Levels of Ability

Self-Concept Component	ABILITY GROUP					
	Competent		High Ability		Extreme Ability	
	Pre	Post	Pre	Post	Pre	Post
Verb	46.7	47.4	51.2	51.3	50.5	49.7
Math	45.6	45.0	50.7	50.5	53.2	52.7
School	44.8	46.0	53.0	51.5	51.7	50.5
Relationship with Parents	52.3	53.1	49.2	48.7	50.0	49.1
Relationship with Same Sex Peers	53.8	55.4	51.1	51.0	44.5	43.9***
Relationship with Opposite Sex	54.9	55.6	49.9	50.8	44.4	43.9***
Physical Appearance	54.9	55.6	49.4	49.5	46.9	46.0** a
Physical Ability	54.8	54.7	50.1	49.7	45.6	46.1***
Honesty	48.2	49.2	51.9	50.7	50.4	49.7
Emotional Stability	51.7	51.8	50.9	50.4	47.0	48.0* b
Global Self-Concept	51.8	52.8	50.7	50.0	47.2	47.5* b

*** Indicates significant differences ($p < .01$) between high ability groups in Phase I & II respectively; indicates marginally significant differences on Phase I & II measurements respectively ($p < .10$)! Note that the scores of the competent group are statistically different from both high ability groups on all measures in Phase I but emotional stability and global self-concept in which their scores resemble those of the high ability group and relationship with parents and honesty on which their scores resemble those of the extreme ability group. In Phase II, competents' scores on honesty change so that they are equivalent to both gifted groups and their scores on emotional stability come to resemble those of the high ability group.

FIGURE 1

DOMAINS OF SELF-CONCEPT OVER TIME

BY GROUP

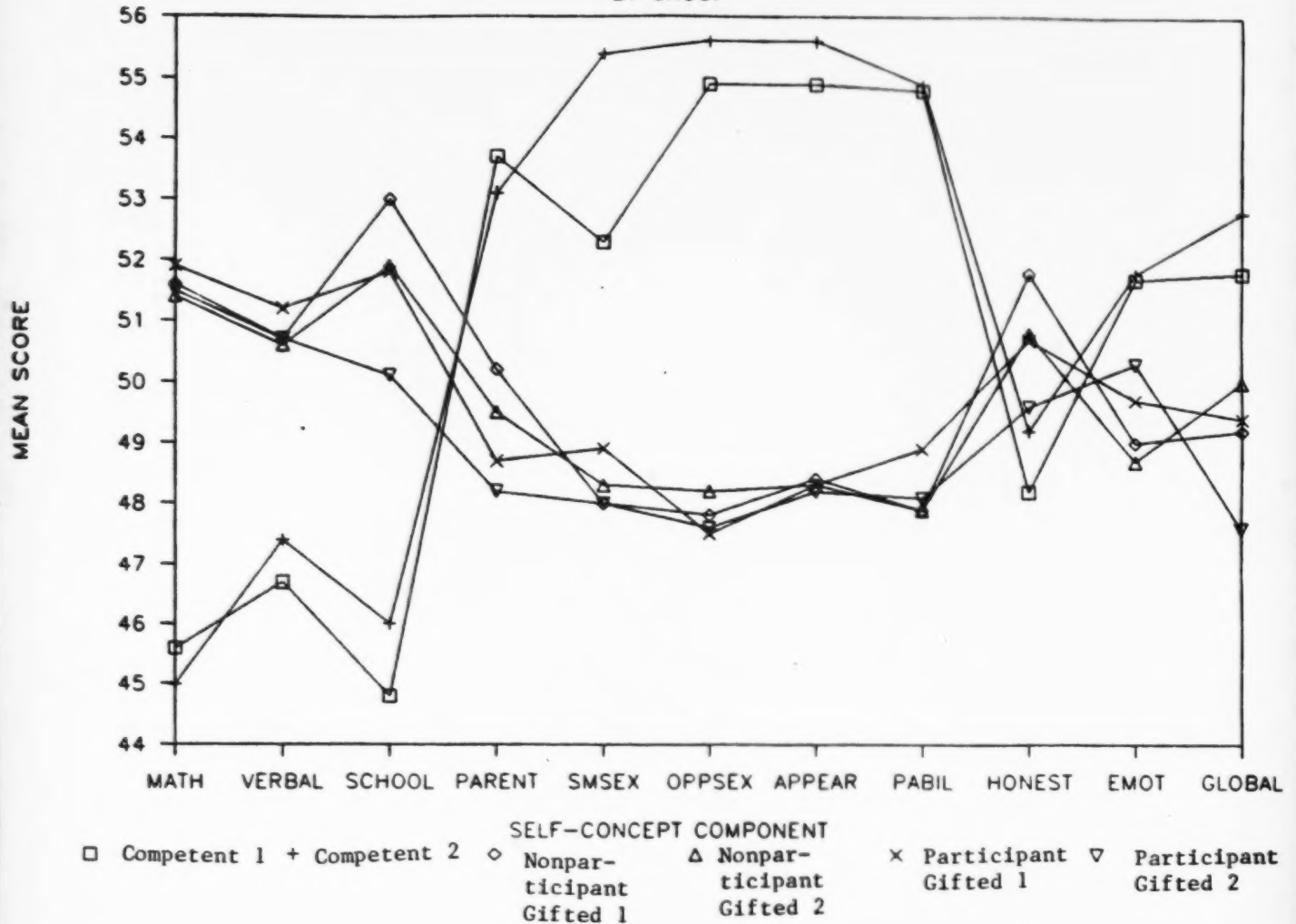


FIGURE 2

ATTRIBUTIONS OVER TIME

BY GROUP

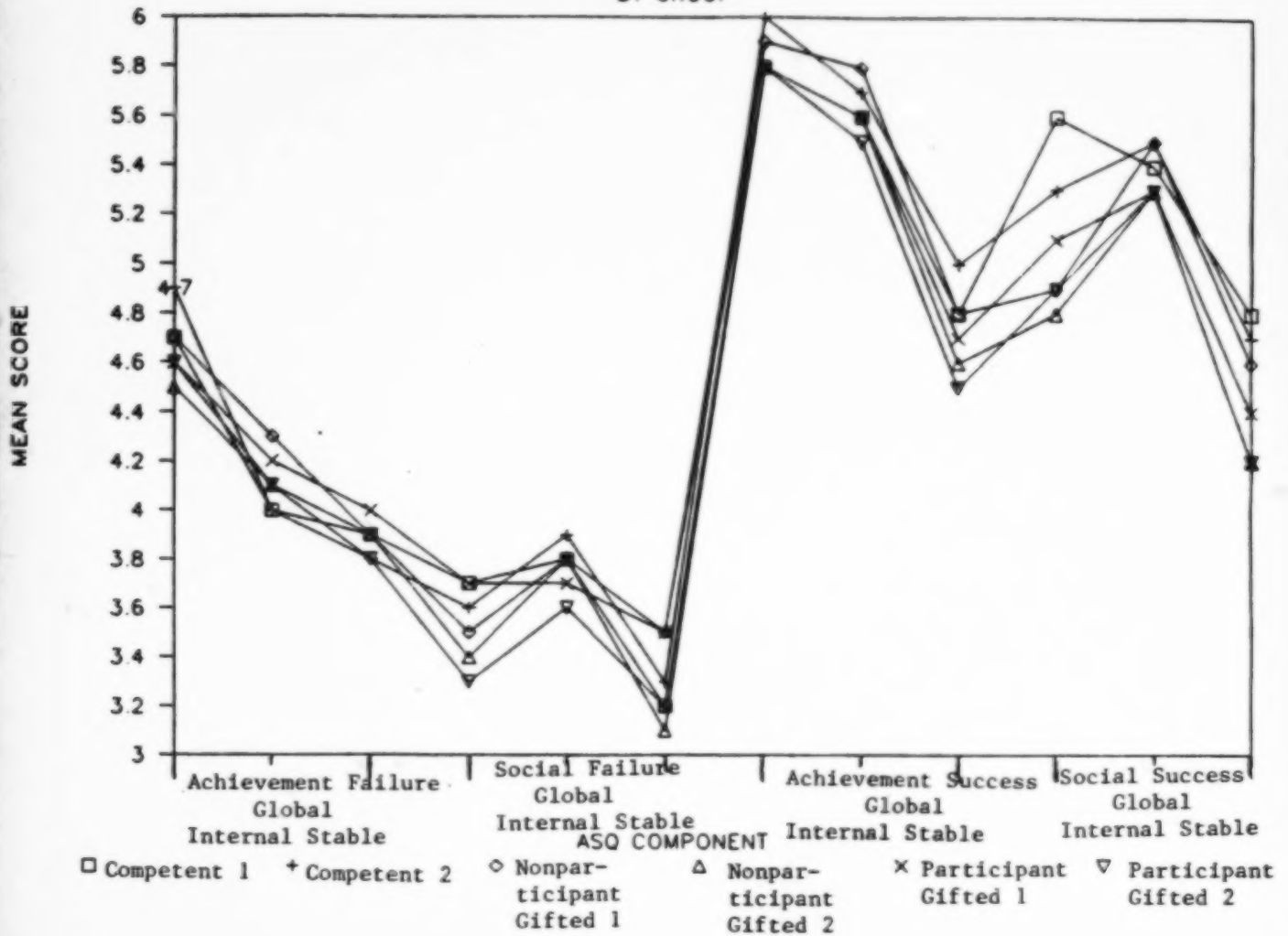


FIGURE 3

DOMAINS OF SELF-CONCEPT

BY ABILITY

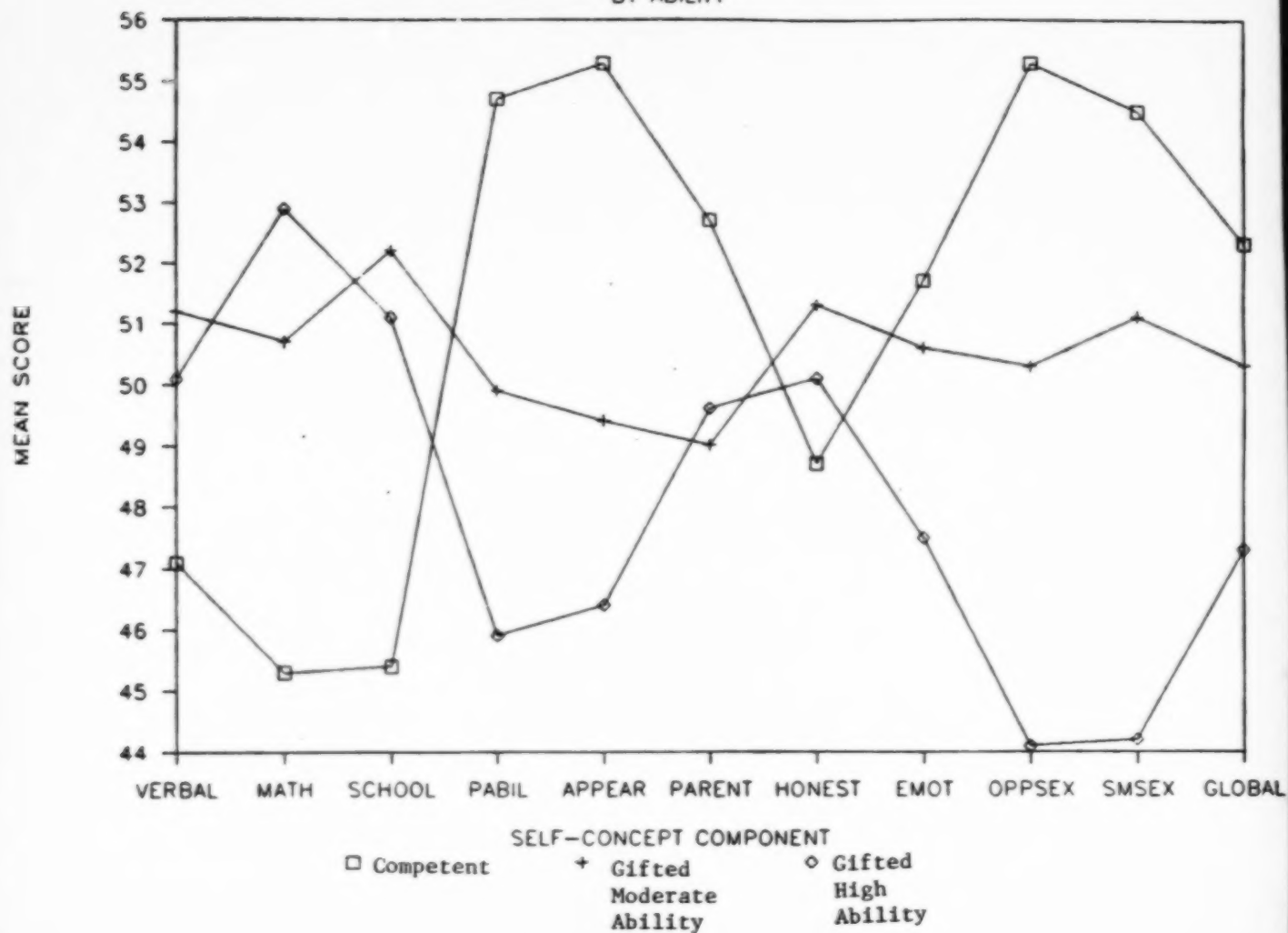


FIGURE 4

ATTRIBUTIONS

BY ABILITY

